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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
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APPLICANT: K. MARKHOFF

SERIAL NO.: 10/067,499

FILED: FEBRUARY 6, 2002

: Examiner: S. Kenny

FOR: PARTIAL OR COMPLETE UTILIZATION OF: Art Unit: 3726
A PRESSURIZED-GAS CYLINDER KNOWN
PER SE FOR COMPRESSED, LIQUEFIED : AF
OR DISSOLVED GASES

Hon. Commissioner of Patents
and Trademarks
P. O. Box 1450
Alexandria, VA 22313-1450

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING FAXED TO (703) 305-3579 AND DEPOSITED WITH THE UNITED STATES POSTAL SERVICE AS FIRST-CLASS MAIL IN AN ENVELOPE ADDRESSED TO: COMMISSIONER OF PATENTS AND TRADEMARKS, P. O. Box 1450, Alexandria, VA 22313-1450 and faxed to (703) 872-9306 ON THIS 25th DAY OF July 2004.

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REQUEST FOR RECONSIDERATION

Sir:

Reconsideration is requested of the Office Action dated December 31, 2003 for the following.

The present invention relates to the utilization of a pre-existing, pre-formed, secondhand, pressurized gas cylinder for compressed liquified or dissolved gases wherein use is made of this pre-existing gas cylinder as a liner or a composite gas cylinder for a higher filling pressure. It is emphasized that the liner itself had previously had utility as a pressurized gas cylinder intended, for example, for lower filling pressures. By the practice of the invention such prior pre-existing cylinders are reused rather than being scrapped or thrown out. This has the significant advantage of

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S. Kenny*

saving resources and reducing emissions since fewer gas cylinders would have to be produced.

As recited in parent Claim 21 the gas cylinder previously made for use with certain filling pressures has a new life by functioning as a liner used for higher filling pressures in a composite gas cylinder where the pre-existing cylinder becomes the liner by wrapping composite fibers over a substantial length of the pre-existing cylinder.

Parent Claim 21 was rejected under 35 USC § 102(b) as anticipated by Windecker. Specifically, Examiner Kenny referred to the disclosure at col. 2, lines 3-12 as the sole portion of Windecker being relied upon to anticipate Claim 21. It is submitted, however, that this interpretation of Windecker as an anticipatory reference is wrong in a number of respects.

At the outset it is noted that col. 2, lines 3-12 refers to a discussion of the prior art practices in the Windecker patent. That discussion, however, must be taken in its context. In that regard, Examiner Kenny's attention is directed to the disclosure which begins in col. 1, line 58 with regard to the prior art practices indicating that "Normally aluminum was used as the liner material to reduce weight...aluminum liners tend to contract more than the winding material, causing the liner to separate from the windings". In the portion of Windecker relied upon by Examiner Kenny, Windecker points out to how that problem of the liner separating from the windings was addressed in the prior art. Namely, "some workers in the art accounted for this problem with aluminum inner liners by first

prestressing the aluminum liner until it deformed plastically, then winding the aluminum liner with the filament windings. Then as the pressure vessel was cooled to cryogenic temperatures, the filament windings and the inner liner contracted with the inner liner in compression and the windings in tension to keep the inner liner in contact with the windings." What is disclosed in this portion of Windecker is the prior art recognition of a problem with liners for pressure vessels regarding the tendency of the liner to separate from the windings. The prior art addressed this problem by modifying the liner to prestress the liner and then wind it with filament windings. Accordingly, what is disclosed is how a liner was modified by the prior art to become an improved liner. Nowhere in this disclosure is there any recognition, suggestion or teaching that the liner before being wrapped with filament windings itself function as a "pre-existing, preformed second-hand pressurized gas cylinder" as stated in parent Claim 21. All that is disclosed is that one form of liner could be replaced by a different form of liner, but the aluminum liner was firstly and lastly still a liner. It is not disclosed as having been in itself a pre-existing pressurized gas cylinder. Based upon the disclosure of Windecker the liner itself could have been merely part of a pressurized gas cylinder as confirmed by the Windecker discussion of the Windecker invention wherein there are more layers to the cylinder than simply a liner and filament windings.

The reliance upon Windecker by Examiner Kenny is also misplaced when viewing the disclosure of Windecker with regard to where the purported teaching is in the Windecker patent that is relied upon by

the examiner. As noted, the teaching actually relates to prior art practices. The Windecker invention, however, is directed to different practices wherein a multi-layer cryogenic tank is formed from a plurality of layers including inner liner 10, filament windings 12 and a thick layer of polyurethane foam insulation 14. Examiner Kenny's attention is directed to the disclosure in Windecker at col. 1, line 58 to col. 2, line 11 which describes what the invention or teaching of Windecker is, namely, a cryogenic tank which is a cryogenic pressure vessel that would be filled with liquid gas. Such tanks are not used as gas cylinders in the manner of this invention. The problems addressed by Windecker do not relate to gas cylinders and clearly do not suggest incorporating a second-hand cylinder as a liner. Usually, metal tanks are cryogenically unstable because the metal gets brittle when cooled to low temperatures. In this status the tanks may burst when pressurized. This danger would be reduced by mechanical pretreatment of "new" tanks. Windecker thus addresses another problem, namely, liner and winding separation when cooled. This problem is managed by pretreating or prestressing the new liner. Accordingly, in Windecker the treatment of the liner producing a prestressed liner is merely one step in a process of forming a new liner from new material and has nothing to do with using a pre-existing pressurized gas cylinder with a lower filling pressure as a liner for a composite gas cylinder for a higher filling pressure as is the subject of Claim 21.

Moreover, there would be no motivation to one of ordinary skill in the art when reading the Windecker disclosure to resort to the prior art practices from which the Windecker invention differs to

again return to those practices and modify them in complete disregard to the fact that these are teachings which Windecker does not adopt, but rather Windecker uses other techniques to improve upon those practices.

It is respectfully urged that Examiner Kenny when again reviewing parent Claim 21 and Windecker should recognize the vital differences between parent Claim 21 and what is reasonably disclosed in Windecker. Clearly, there is no teaching in the cited references of the process of parent Claim 21 which utilizes a pre-existing gas cylinder, one having a life unto itself and then converting that gas cylinder into a liner for a composite gas cylinder for a higher filling pressure.

In view of the above remarks this application should be passed to issue.

Respectfully Submitted,
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